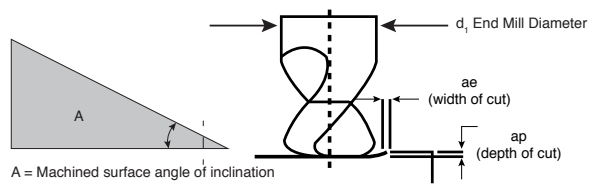


GF500 T & GF300 T Torus nose / Corner Radius



$$\text{RPM} = Vc \times 1000 / (3.14 \times d1)$$

$$\text{mm/min} = fz \times z \times \text{RPM}$$



INCH

Tool length/reach up to 3xD Vc and fz 100%
 Tool length/reach 3-5xD Vc and fz 80%
 Tool length/reach > 5-10xD Vc and fz 60%

		d End Mill Ø							
Application	Width/depth	1/16	1/8	3/16	1/4	5/16	3/8	1/2	5/8
Roughing	WOC (ae)	.005	.008	.014	.017	.023	.028	.042	.059
	DOC (ap)	.031	.063	.094	.125	.156	.188	.250	.313
Finishing	WOC (ae)	.003	.005	.006	.006	.008	.011	.017	.020
	DOC (ap)	.006	.013	.019	.029	.039	.056	.083	.117

Material	Hardness	Type of End Mill	ae Max	Cutting Speed SFM	Feed Rate Inch per Tooth - IPT							
					d1 End Mill Diameter							
					1/8	1/4	5/16	3/8	1/2	5/8	3/4	1
					Multiply IPT x this factor based on WOC							
Structural + free-cutting steels, unalloyed heat-treatable + case hardened steels A283, 1151, 1215, L10, 10Lxx, 11Lxx, 12Lxx, 41Lxx, 51Lxx, 86Lxx, 86Lxx, 10xx	up to 28 HRc	GF500	0.40 x D	790	.0019	.0038	.0047	.0056	.0075	.0094	.0113	.0150
		GF500	0.25 x D	1120	.0013	.0026	.0033	.0039	.0053	.0069	.0081	.0106
		GF500	0.15 x D	1180	.0013	.0026	.0033	.0039	.0053	.0069	.0081	.0106
Free-cutting steels, unalloyed case hardened steels, nitriding steels 1151, 1215, L10, 10Lxx, 11Lxx, 12Lxx, 41Lxx, 51Lxx, 86Lxx, 86Lxx, 10xx, 11xx	28 to 38 HRc	GF500	0.40 x D	720	.0019	.0038	.0047	.0056	.0075	.0094	.0113	.0150
		GF500	0.25 x D	1020	.0013	.0026	.0033	.0039	.0053	.0069	.0081	.0106
		GF500	0.15 x D	1082	.0013	.0026	.0033	.0039	.0053	.0069	.0081	.0106
Alloyed heat-treatable, tool and high speed steels 13xx, 2340, 31xx, 32xx, 33xx, 34xx, 40xx, 41xx, 43xx, 4640, 50xx, 51xx, 61xx, 71xx, 86xx, 87xx, 92xx, 98xx, 98xx, Ax, Ox, Dx, Hxx, Lx, Wx, Mx, Tx	28 to 44 HRc	GF500	0.40 x D	660	.0015	.0030	.0038	.0045	.0060	.0075	.0088	.0119
		GF500	0.25 x D	620	.0011	.0021	.0027	.0031	.0042	.0050	.0063	.0081
		GF500	0.15 x D	980	.0011	.0021	.0027	.0031	.0042	.0050	.0063	.0081
Hardened Steels Carbon and Alloy Steels, Tool & Die Steels	Up to 54 HRc	GF500	0.30 x D	400	0.0015	0.0030	0.0038	0.0045	0.0060	0.0075	0.0088	0.0119
		GF500	0.20 x D	620	0.0011	0.0021	0.0027	0.0031	0.0042	0.0050	0.0063	0.0081
		GF500	0.15 x D	660	0.0011	0.0021	0.0027	0.0031	0.0042	0.0050	0.0063	0.0081
	Up to 54 HRc	GF300	0.20 x D	490	0.0009	0.0018	0.0022	0.0026	0.0035	0.0044	0.0050	0.0069
		GF300	0.10 x D	530	0.0008	0.0016	0.0020	0.0024	0.0033	0.0044	0.0050	0.0063
		GF500	0.40 x D	530	0.0016	0.0033	0.0041	0.0049	0.0065	0.0081	0.0100	0.0131
Stainless steel 303, 410, 420F, 430, 430F, 416	Up to 28 HRc	GF500	0.25 x D	762	0.0011	0.0023	0.0028	0.0034	0.0046	0.0056	0.0069	0.0094
		GF500	0.15 x D	790	0.0011	0.0023	0.0028	0.0034	0.0046	0.0056	0.0069	0.0094
		GF500	0.30 x D	390	0.0015	0.0030	0.0038	0.0045	0.0060	0.0075	0.0088	0.0119
Stainless steel 304, 304L, 420, 17-4PH, 17-7PH, 15-5PH, 13-8PH	up to 28 HRc	GF500	0.25 x D	556	0.0011	0.0021	0.0027	0.0031	0.0042	0.0050	0.0063	0.0081
		GF500	0.10 x D	620	0.0010	0.0020	0.0024	0.0029	0.0039	0.0050	0.0056	0.0075
		GF500	0.25 x D	260	0.0013	0.0025	0.0031	0.0038	0.0050	0.0063	0.0075	0.0100
Stainless steel 310, 316, 316B, 316L, 317, Duplex	over 28 HRc	GF500	0.20 x D	390	0.0009	0.0018	0.0022	0.0026	0.0035	0.0044	0.0050	0.0069
		GF500	0.10 x D	430	0.0008	0.0016	0.0020	0.0024	0.0033	0.0044	0.0050	0.0063
		GF500	0.25 x D	150	0.0013	0.0025	0.0031	0.0038	0.0050	0.0063	0.0075	0.0100
Titanium Alloys 6Al-4V, 5Al-2.5 Sn, 6Al-2Sn-4Zr-6Mo, 3Al-8V-6Cr4Mo-4Zr, 10V-2Fe-3Al, 13V-11Cr-3Al	up to 42 HRc	GF500	0.20 x D	200	0.0009	0.0018	0.0022	0.0026	0.0035	0.0044	0.0050	0.0069
		GF500	0.10 x D	260	0.0008	0.0016	0.0020	0.0024	0.0033	0.0044	0.0050	0.0063
		GF500	0.30 x D	330	0.0015	0.0030	0.0038	0.0045	0.0060	0.0075	0.0088	0.0119
High-Temperature Alloys Inconel, Nimonic, Monel, Hastelloy, Waspalloy, A286, Rene 41, Udimet, Stellite	up to 42 HRc	GF500	0.20 x D	490	0.0011	0.0021	0.0027	0.0031	0.0042	0.0050	0.0063	0.0081
		GF500	0.15 x D	490	0.0011	0.0021	0.0027	0.0031	0.0042	0.0050	0.0063	0.0081
		GF500	0.40 x D	720	0.0019	0.0038	0.0047	0.0056	0.0075	0.0094	0.0113	0.0150
Cast iron, grey cast iron, spheroidal graphite and malleable cast iron 0.6010 EN-GL100 (GG10), 0.6020 EN-GJL-200 (GG20), 0.7050 EN-GJS-500-7 (GGG50), 0.8535 EN-GJMW-350-4 (GTW35)	up to 240 HB 30	GF500	0.25 x D	1020	0.0013	0.0026	0.0033	0.0039	0.0053	0.0069	0.0081	0.0106
		GF500	0.15 x D	1080	0.0013	0.0026	0.0033	0.0039	0.0053	0.0069	0.0081	0.0106
		GF300	0.40 x D	590	0.0016	0.0033	0.0041	0.0049	0.0065	0.0081	0.0100	0.0131
Cast iron, grey cast iron, spheroidal graphite and malleable cast iron 0.6025 EN-GL250 (GG25), 0.6035 EN-GJL-350 (GG35), 0.7070 EN-GJS-700-2 (GGG70), 0.8170 EN-GJMB-700-2 (GTS70)	over 240 HB 30	GF300	0.25 x D	820	0.0011	0.0023	0.0028	0.0034	0.0046	0.0056	0.0069	0.0094
		GF300	0.15 x D	890	0.0011	0.0023	0.0028	0.0034	0.0046	0.0056	0.0069	0.0094
		GF500	0.40 x D	1976	0.0020	0.0040	0.0050	0.0060	0.0080	0.0100	0.0119	0.0163
Aluminum, Al-wrought alloys, Al-alloys 2024, 6061, 7075, 1050, 6351, 5005, 2017, 7075	up to 3% Si	GF500	0.25 x D	2620	0.0014	0.0028	0.0035	0.0042	0.0056	0.0069	0.0081	0.0113
		GF500	0.15 x D	2950	0.0014	0.0028	0.0035	0.0042	0.0056	0.0069	0.0081	0.0113
		GF500	0.40 x D	980	0.0019	0.0038	0.0047	0.0056	0.0075	0.0094	0.0113	0.0150
Aluminium-cast alloys 3.2131 G-AISI5Cu1, 3.2153 G-AISI7Cu3, 3.2573 G-AISI9, 3.2581 G-AISI12, 3.2583 G-AISI12Cu, - G-AISI12CuNiMg	over 3% Si	GF500	0.25 x D	1310	0.0013	0.0026	0.0033	0.0039	0.0053	0.0069	0.0081	0.0106
		GF500	0.15 x D	1640	0.0013	0.0026	0.0033	0.0039	0.0053	0.0069	0.0081	0.0106
		GF500	0.40 x D	590	0.0016	0.0033	0.0041	0.0049	0.0065	0.0081	0.0100	0.0131
Magnesium-alloys MgMn2, G-MgAl8Zn1, G-MgAl6Zn3	-	GF500	0.25 x D	850	0.0011	0.0023	0.0028	0.0034	0.0046	0.0056	0.0069	0.0094
		GF500	0.15 x D	890	0.0011	0.0023	0.0028	0.0034	0.0046	0.0056	0.0069	0.0094
		GF500	0.40 x D	820	0.0019	0.0038	0.0047	0.0056	0.0075	0.0094	0.0113	0.0150
Non-ferrous metals (copper, short- or long-chipping brass or bronze)	up to 28 HRc	GF500	0.25 x D	1150	0.0013	0.0026	0.0033	0.0039	0.0053	0.0069	0.0081	0.0106
		GF500	0.15 x D	980	0.0013	0.0026	0.0033	0.0039	0.0053	0.0069	0.0081	0.0106
		GF500	0.40 x D	820	0.0019	0.0038	0.0047	0.0056	0.0075	0.0094	0.0113	0.0150